AMENDMENTS TO THE DRAWINGS

Please substitute the attached Replacement Sheet containing amended Fig. 6 for the Replacement Sheet containing Fig. 6 that was submitted on September 8, 2004. In amended Fig. 6, reference character 15, as now referenced in the specification, has been added.

Attachment: Replacement sheet

REMARKS

With the entry of this Amendment, claims 3-16 will be pending in this patent application. All of these claims read on the elected species.

In this Amendment, the subject matter that had been recited claim 2 is now recited in new independent claim 8. Claims 1 and 2 have been canceled, claims 3-7 have been amended to depend from claim 8, and new claims 9-16 have been added. Support for the subject matter recited in claims 9, 14 and 15 can be found in the specification as filed on page 16, line 21 through page 18, line 21; support for the subject matter recited in claim 10 can be found on page 15, lines 18-24; support for the subject matter recited in claims 11-13 can be found on page 20, line 21 through page 21, line 7; support for the subject matter recited in claim 16 can be found on page 16, lines 15-20.

OBJECTIONS TO CLAIMS

The Examiner's objections to claims 1 and 2 have been obviated in this paper by the cancellation of claims 1 and 2.

OBJECTION TO SPECIFICATION

The Examiner's objection to the specification has been obviated in this paper by an amendment to page 9 of the specification and the submission of a replacement drawing sheet with amended Fig. 6. No new matter has been introduced by these amendments.

PRIOR ART REJECTION I

Claims 1, 4 and 5 were rejected under 35 USC § 103(a) as being unpatentable over JP 2001 029523 (JP '523) in view of US 5295686 (Lundberg).

This rejection has been rendered moot by the cancellation of claim 1 and the amendment of claims 4 and 5 to depend from new claim 8.

PRIOR ART REJECTION II

Claim 2 was rejected under 35 USC § 103(a) as being unpatentable over JP '523 in view of Lundberg and further in view of US 1927083 (Davis). Applicant traverses this rejection insofar as it might be deemed applicable to any of claims 4, 5 and 8-15 as now presented.

As noted above, the subject matter that had been recited claim 2 is now recited in new independent claim 8.

The iron-type golf club disclosed by JP '523 includes a face plate having thin and thick portions and a main body with an opening surrounded by a support for a peripheral edge portion of the face portion. The Examiner correctly observes that JP '523 does not offer a disclosure of a set of set of iron-type golf clubs in which attributes of the thin portion of the face plate vary though the different clubs of the set, as now specified in claim 8. As a remedy for this deficiency of the disclosure in JP '523 vis-à-vis the requirements of the claim, the Examiner proposes modifying the JP '523 golf club so that, in a set of these iron-type golf clubs, the disposition of thin and thick portions of the face plate varies through the different clubs making up the set. As a basis for this modification, the Examiner cites the disclosure in Lundberg of a set of correlated golf clubs in which the center of gravity varies from club to club. In particular, the Examiner cites Figs. 13 and 14 of Lundberg, which show differing locations of thick and thin portions in irons with differing lofts.

In the iron-type golf club sets disclosed by Lundberg, the weighting of the club heads varies so as to locate the center of gravity of the less lofted clubs toward the heel of the club head and locate the center of gravity of the more lofted clubs toward the toe. See, for example, column 3, lines 56-65. As disclosed by Lundberg, Figs. 13 and 14 illustrate a "mechanism for varying the center of gravity locations." For the 9-iron illustrated in Fig. 13, the shape and location of the raised portion 22 locates the center of gravity "on the toe side of center plane 14." (The center plane 14 is illustrated, for example, in Fig. 10.) For the 2-iron illustrated in Fig. 14, the shape and location of the raised portion 22' locates the center of gravity "on the heel side of center plane 14."

Applicant does not agree with the Examiner's assertion that it would have been obvious in view of Lundberg's disclosure to modify the JP '523 golf club, as the Examiner proposes, so

that different clubs in a set of these clubs would have differing locations of a face center and a center of figure of the thin portion of the club face. There is, for example, no disclosure or suggestion whatsoever in JP '523 of the necessity or desirability of such a modification.

As noted above, in the set of golf clubs disclosed by Lundberg, the center of gravity is located toward the heel for the less lofted clubs and toward the toe for the more lofted clubs. This is the opposite of the relationship specified by conditions (3) and (4), as recited in Applicant's claim 8. (Higher values for Si, which defines the distance between the face center and the sweet spot, occur in the more lofted clubs.) Accordingly, even if the JP '523 golf club were modified as the Examiner proposes, the resulting set of golf clubs would not satisfy the requirements of Applicant's claim 8.

The Examiner characterizes the Davis patent as offering a disclosure that would have made it obvious to modify the JP '523-Lundberg set of irons so that the sweet spot is closer to the heel for less lofted clubs.

Applicant does not agree with the Examiner's characterization of the Davis disclosure. The passage in Davis cited by the Examiner reads, "It is desirable to have the "sweet spot", that is, substantially the center of gravity of the club, substantially at its geometric center." Obviously, Davis does not offer any disclosure relating to the distance between a face center and a sweet spot of a golf club. Furthermore, the Davis disclosure seems to be at odds with the Examiner's proposal to modify the JP '523 club so as to be a set of clubs in which the center of gravity for less lofted clubs is closer to the heel than it is for more lofted clubs.

Applicant submits that the observations presented above show that independent claim 8 is patentable over the disclosures in JP '523, Lundberg and Davis. Clearly, claims 4, 5 and 9-15 are also patentable, at least by virtue of their dependence from claim 8. The dependent claims also define further patentable departures from the disclosures in JP '523, Lundberg and Davis. These prior art documents do not, for example, offer disclosures that meet or make obvious the requirements for: A depth Li, as recited in claim 3; The trapezoidal shape of the thin portion, as recited in claims 6 and 7; the ranges of distance Xi, as recited in claim 9; The correlation of the locations of the sweet spot and the center of figure of the thin portion, as recited in claim 11; The disposition of the sweet spot, as recited in claim 12; The distance of the center of figure of the

thin portion relative to the sweet spot, as recited in claim 13; The locations of a weight member, as recited in claim 14; The relative locations of the thin and thick portions, as recited in claim 15.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in JP '523, Lundberg and Davis can properly serve as a basis for rejecting any of claims 4, 5 and and 8-15, as now presented, under 35 USC § 103(a).

PRIOR ART REJECTION III

Claim 3 was rejected under 35 USC § 103(a) as being unpatentable over JP '523 in view of Lundberg and further in view of US 4874171 (Ezaki et al.). Applicant traverses this rejection insofar as it might be deemed applicable to claim 3 as now presented.

The Examiner characterizes Ezaki et al. as disclosing golf clubs with a center of gravity depth that is smaller for more lofted clubs than it is for less lofted clubs. The Examiner asserts that the Ezaki et al. disclosure would have made obvious a modification of the JP '523-Lundberg set of irons so that the depth of the center of gravity varies within the clubs of the set and is smaller for the more lofted clubs than it is for the less lofted clubs.

Without acquiescing in the Examiner's proposal to combine disclosures in JP '523, Lundberg and Ezaki et al., Applicant notes that Ezaki et al. offers no disclosure that can cure deficiencies in the JP '523 and Lundberg disclosures vis-à-vis the requirements of parent claim 8.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in JP "523, Lundberg and Ezaki et al. properly serve as a basis for rejecting claim 3, as now presented, under 35 USC § 103(a).

PRIOR ART REJECTION IV

Claims 6 and 7 were rejected under 35 USC § 103(a) as being unpatentable over JP '523 in view of Lundberg and further in view of US 5242167 (Antonious). Applicant traverses this rejection insofar as it might be deemed applicable to any of claims 6, 7 and 16 as now presented.

Claims 6 and 7, which depend from claim 8, require that the golf clubs of the set have a thin portion with a trapezoidal shape with a dimension that is larger at the sole portion of the club than at the top portion of the club.

With regard to claims 6 and 7, Applicant observes that the disclosure in Antonious cannot cure deficiencies in the JP '523 and Lundberg disclosures vis-à-vis the requirements of parent claim 8.

New independent claim 16 also recites the trapezoidal shape of the thin portion but does not require the conditions (3) and (4) for Si that are required by claim 8.

The Examiner characterizes JP '523 and Lundberg, as disclosing "different shapes of a thin portion." The Examiner characterizes Antonious as disclosing "different shapes for effecting weight distribution of a head and cites Fig. 12 of Antonious as showing a trapezoidal shape. While apparently conceding that JP '523, Lundberg and Antonious do not disclose a golf club with a thin portion having a trapezoidal shape as claimed by Applicant, the Examiner concludes that the particular trapezoidal shape of the thin portion as claimed would have been obvious "as a design choice."

As disclosed in the paragraph beginning on page 19 in the specification of this application, the trapezoidal shape of the thin portion, which is wider near the sole of the club, is advantageous for hitting a ball placed directly on the grass.

Neither JP '523 nor Lundberg offer any suggestion of a thin portion with a trapezoidal shape as claimed. Fig. 12 of Antonious shows a trapezoid-shaped *raised mass* 828 carried on a thin portion of the club head. That is, Antonious discloses a golf club with a club head having a *thick* portion with a trapezoidal shape. Furthermore, the trapezoid-shaped mass is wider near the top of the club head. Obviously, arriving at the claimed trapezoidal shape of the thin portion "as a design choice" is not viable, since there are no clearly disclosed designs exhibiting this shape from which to make such a choice.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in JP '523, Lundberg and Antonious can properly serve as a basis for rejecting any of claim 6, 7 and 16 under 35 USC § 103(a).

OTHER PRIOR ART

Applicant has considered the other prior art cited by the Examiner. Applicant is not commenting on this prior art, because it was not applied against the claims in this application.

CONCLUSION

In view of the observations and arguments presented herein, Applicant respectfully requests that the Examiner reconsider and withdraw the objections and rejections stated in the outstanding Office Action and recognize all of the pending claims as allowable.

Dated: June 23, 2006

Respectfully submitted,

By_____
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Attachment Replacement Sheet: